

President de la Madrid, gracious hosts, ladies and gentlemen:

It is a great pleasure this evening to bring greetings from the Board of Governors of The Weizmann Institute of Science and from the world community of laymen and scientists that it represents. I bring special greetings from our Chairman, Lord Marcus Sieff who, unfortunately, was unable to attend our gathering.

I would like to say a few words about the role of science in improving the quality of life in today's world. The complexity of research and development is increasing at an ever more rapid rate. All of us are aware of the important advances in the treatment of disease and in the application of technological discovery to the daily life of the average citizen. One of the most exciting recent developments has been in the field of genetics, where development of DNA recombinant technology has made possible a major revolution in the understanding of the life of the cell and of approaches to the unraveling of the causative factors in disease. It is now possible to transfer bits of DNA, representing individual genes in the hereditary material of the nucleus, from organism to organism. Such genetic engineering will, in the coming years, make possible dramatic and beneficial modifications in the

inherent properties of living things, ranging from bacteria, to plants, to man. We who sit here tonight and who live in the comfort of Western world civilization, frequently forget the situation in which so many of our fellow humans find themselves. It is important to remember that the number of individuals who suffer from the common medical scourges of man such as cancer, cardiovascular disease and various neuromuscular diseases -- to name only a few -- form a small fraction of those throughout the world who are disadvantaged by environment and by the lack of adequate public health and education. More than half of our fellow human beings go to bed hungry every night. For this reason, it is particularly gratifying that the modern techniques of genetics are beginning to be applied to plant life in a way that should eventually have a great impact on agricultural productivity. One interesting area of research is involved with the production, by genetic engineering techniques, of bacteria with a high capacity for converting atmospheric nitrogen into forms of nitrogen that can be used as fertilizer by plants. Thus, plants that have a symbiosis with such bacteria can be nearly independent of the fertilizers now used in large-scale agriculture that require large inputs of energy in their manufacture. Such developments, together with improved methodologies for making available water in adequate amounts, should go far toward the alleviation of

the serious nutritional problems that now exist in essentially all countries and, particularly, in the so-called "third world." The severe malnutrition and concomitant poverty that is the lot of this major fraction of our world population may also be indirectly responsible for the high frequency of the tropical diseases that are the major illnesses in most of the tropical belt.

Because of the importance of improvement in agriculture, our gathering tonight has a special significance because, as you undoubtedly know, President de la Madrid will shortly receive a scroll establishing a chair in photosynthesis. Photosynthesis is a central process in the capture of solar energy by plants, and this process makes possible the production of essentially all of our foodstuffs. In addition, the capture of solar energy by plants and the subsequent conversion of plant products to combustible materials will certainly become an important adjunct to the world's energy resources. Creation of a chair in photosynthesis is, therefore, an especially fitting step in the attack on the major societal problems of nutrition and energy.

Once again, I would like to thank you all for your hospitality, and to express the appreciation of the Board of Governors for this warm, family occasion.